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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,680	11/27/2001	Ludovic Noirie	Q67255	7290

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EXAMINER
ROJAS, OMAR R

ART UNIT	PAPER NUMBER
2874	

DATE MAILED: 01/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/993,680

Applicant(s)

NOIRIE ET AL.

Examiner

Omar Rojas

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on October 21, 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. With regards to the amendment filed on October 21, 2003 (hereinafter "the Amendment"), all the requested changes to the claims have been entered.

Response to Arguments

2. Applicant's arguments, see the Amendment at pages 5-6, filed October 21, 2003, with respect to claims 1 and 6 in view of the Pan reference have been fully considered and are persuasive. The rejection of claims 1 and 6 in view of Pan has been withdrawn.
3. Applicant's arguments filed in the Amendment with respect to the Miyachi reference have been fully considered but they are not persuasive. As recited by the Applicants on page 8 of the Amendment, "[t]he total number of wavelengths demultiplexed by [Miyachi et al.] is based on the formula $KM=N$, where N is the total number of wavelengths, M is the number of wavelength groups and K is the number of channels in a wavelength group." See also paragraph [0096] of Miyachi. Thus, the values of K and M in Miyachi are simply integer variables in a mathematical formula expressly disclosed by Miyachi. *Id.*

Applicants appear to implicate that M and K are equal to each other in Miyachi (see the footnote on page 9). If this were necessarily the case, there would be no need for Miyachi to disclose the formula $KM=N$. Instead, the formula $KK=N$ or $MM=N$ would suffice. Although Miyachi discloses an embodiment in Fig. 14 where $M=4$ and $K=4$, this is *only an example*. See Miyachi at page 13, line 39. Thus, K and M in Miyachi must

Art Unit: 2874

inherently differ in certain situations (for example, when K and M are equal to 2 and 3, respectively).

Alternatively, assuming *arguendo* that Miyachi does not contemplate or suggest that K and M are mutually prime numbers, it would be obvious to pick a pair of mutually prime numbers (i.e., K=2 and M=3; or K=3 and M=4, etc.) to use in Miyachi simply based on the formula disclosed by Miyachi: $KM=N$. To say that Miyachi does not teach or suggest a mutually prime K and M is tantamount to saying that Miyachi does not teach or suggest that K and M are odd numbers or that K and M are natural numbers. Thus, the examiner maintains the previous rejection in view of Miyachi and has alternatively indicated claims 1-6 as obvious in view of Miyachi.

Claim Rejections - 35 USC § 102/103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

Art Unit: 2874

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-6 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EP 1 043 859 to Miyachi et al. ("Miyachi").

Regarding claims 1-5, Miyachi discloses (e.g., see Figs. 13-15) an optical demultiplexing/multiplexing system which has three levels of granularity and includes M interleaved bands of wavelengths which include K wavelengths, which system further includes a 1-to-M deinterleaving demultiplexer (113) and a 1-to-K deinterleaving demultiplexer (114).

Note that the numbers M and K used in Miyachi would inherently differ depending on the number of wavelength channels used (i.e., depending on the value "N" in the formula " $KM=N$ " disclosed by Miyachi at page 13, line 29). Thus, having a mutually prime M and K could be inherent in Miyachi.

Alternatively, the Examiner notes that it would be obvious to use mutually prime numbers M and K in Miyachi based on Miyachi's formula $KM=N$. See section [0096] of Miyachi. Picking different numbers M and K to use in Miyachi would amount to routine experimentation.

The demultiplexer (113) also has a periodic transfer function and is based on an arrayed waveguide grating (AWG). Likewise, the demultiplexer(s) (114) are similar to first demultiplexer (113) and thus would inherently be periodic and based on an AWG as

Art Unit: 2874

well, but have a broader transmission bandwidth as disclosed by Miyachi. See also pg. 13, line 21 to pg. 14, line 16.

Regarding claim 6, Miyachi also discloses a multiplexing system using first (116) and second (117) multiplexers which substantially meets all the recited limitations in view of the previous remarks concerning Miyachi.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (703) 305-8528 and whose e-mail address is *omar.rojas@uspto.gov*. The examiner can normally be reached on Monday-Friday (7:00AM-3:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hemang Sanghavi, can be reached on (703) 305-3484. The fax phone

Application/Control Number: 09/993,680

Page 6


Art Unit: 2874

number for the organization where this application or proceeding is assigned is (703) 872-9318 for regular communications. The fax phone number for After Final communications is (703) 872-9319. The examiner's personal work fax number is (703) 746-4751.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Omar Rojas
Patent Examiner
Art Unit 2874

or
January 3, 2004


AKM ENAYET ULLAH
PRIMARY EXAMINER